

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Richard S. Myers on 09/10/10.

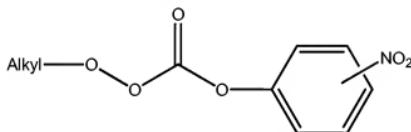
The application has been amended as follows:

Title (New): "MS Based Peptide and Protein Sequencing via Reactions of Lysine Residues with Peroxycarbonate Compounds".

Cancel claims 5 and 7-18.

Claim 1 (Amended):

A method of identifying protein or peptide sequences, comprising:
providing a protein or peptide sample;
providing a peroxy carbonate solution, wherein the peroxy carbonate solution comprises the following peroxy carbonate compound:



wherein NO₂ group is in para- or meta-position;

combining the protein or peptide sample and the peroxy carbonate solution to form a sample solution to perform a reaction between lysine residue amino groups and the peroxy carbonate compound which yields lysine peroxy carbamates;

performing a mass spectrometric analysis of the lysine peroxy carbamates to obtain the protein or peptide sequence

inserting the sample solution into a mass spectrometer, analyzing the mass spectrometer results using standard mass spectrometry procedures.

In Claim 4: substitute [spectrometer] with -- spectrometric analysis --.

Claim 6 (Amended): The method of claim 1, wherein the peroxycarbonate solution comprises the following compound:

the structure

the NO₂ group is in *para*-position.

Claim 19 (New): The method of claim 1, wherein the NO₂ group is in *meta*-position.

Claim 20 (New): The method of claim 1, wherein the mass spectrometric analysis comprises collision induced dissociation (CID).

Claim 21 (New): The method of claim 20, wherein mass spectrometric analysis comprises first forming H, Li, Na, K, or Ag peroxy carbamate adducts.

Claim 22 (New): The method of claim 1, wherein mass spectrometric analysis follows LC separation of the peroxy carbamate compound.

2. **Claims 1-4, 6 and 19-22** are allowed. The new numbering of claims is 1 through 9.

3. The following is an examiner's statement of reasons for allowance: the claims recite a method of identifying peptide or protein sequence using MS analysis through reaction of lysine amino acid residues with peroxy carbonate compounds, which is not found in the prior art, with specific compounds used in the examples, which provides enablement of the method within the scope of the claims. The only prior art relevant to the claimed method is the JACS publication by the inventors, "Lysine Peroxycarbamates: Free Radical-Promoted Peptide Cleavage".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

Art Unit: 1797

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Y. Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797

9/10/2010